

CASE STUDY 1: **BIO21 INSTITUTE**

Victorian Government investment in the construction of the Bio21 Institute supported the development of a multidisciplinary hub, bringing industry and researchers together to maximise health and research outcomes.

IDENTIFIED PROBLEM/GAP

Leaders from the University of Melbourne, Melbourne Health and WEHI identified the need for greater linkages between biotechnology research, translation and commercialisation activities within Victoria. These entities partnered with the Victorian Government to establish Bio21 Australia Limited, which expanded to become the Bio21 Cluster representing more than 21 hospitals and medical research institutions. The overall aim of the Project was to create a medically focused hub of research, development and commercialisation that would attract talent and investment from around the world.

The Bio21 Molecular Science and Biotechnology Institute was formed out of the Bio21 Australia partnership as a formal institute and new premises. The Bio21 Institute aimed to specialise in interdisciplinary research, industry engagement and state-of-the-art platform technologies, providing critical mass (the minimum amount of resources necessary to become self-sustaining) to maximise health and research outcomes, encouraging institutions to work collaboratively.

OVERVIEW OF THE INVESTMENT

The Victorian Government provided \$35 million in funding through the STI First Generation (Other Funding) for the construction and establishment of the Bio21 Institute and associated infrastructure. The \$35 million was distributed between the Bio21 Institute (\$15 million), the Ludwig Institute for Cancer Research and WEHI Joint Proteomics Facility (\$5 million) and a Bio21 STI strategic development fund for seeding research infrastructure investments and collaborations between Bio21 Australia members (\$15 million). Victorian Government funding for the Bio21 Institute was supplemented by additional funding from the University of Melbourne (\$50 million), the Atlantic Philanthropic Foundation (\$30 million), the Australian Government (\$9.5 million) and industry. A further \$1 million in Victorian Government funding was provided for the Bio21 Clean Room through the STI Second Generation (Strategic Projects).

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MORE THAN
500
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The Bio21 Institute houses a range of **platform technologies**

Including:

- Magnetic Resonance
- Advanced Electron Microscopy
- new Protein Characterisation facilities
- Systems and Computational Biology facilities
- a major Mass Spectrometry facility.

IMPACT

The Bio21 Institute now houses more than 800 research scientists, students and industry participants. It plays an important role in building a pipeline of talent, currently training around 380 early career researchers, post-doctorates and PhD students. It also supports Year 11 and Year 12 students to take their VCE studies out of the classroom into Bio21 Institute labs.

The Bio21 Institute houses a range of platform technologies, employs managers to run them, and educates researchers to use them. Platform technologies include Magnetic Resonance Imaging, Advanced Electron Microscopy, new Protein Characterisation facilities, Systems and Computational Biology facilities, and a major Mass Spectrometry facility. Access to these platforms by researchers enables discovery, knowledge translation and commercialisation. The platform technologies also attract leading scientists from around to world to Victoria.

Australia's largest multinational biopharmaceutical company CSL has based its global Research and Translational Science hub in Melbourne due to the reputation, facilities and research environment of Bio21 and surrounds. CSL has been a partner of the Bio21 Institute since 2007, and now has around 170 scientists co-located at the facility.

The Bio21 Institute has played a role in improving health outcomes. This includes a potential treatment for Motor Neurone Disease and Parkinson's Disease, a new approach to eradicating dengue fever, a more effective malaria treatment, and 3D modelling of tuberculosis mutations to allow doctors to rapidly tailor individual treatments.

As a successful model of industry-academic relationships, the Bio21 Business Incubator has added to the pipeline of new Victorian businesses. Patrys Ltd, an ASX-listed company, is developing antibody therapies in oncology. Sienna Cancer Diagnostics focuses on the development of novel in vitro diagnostic cancer tests. Bioscreen has developed into a commercial faecal microbiome testing business linked with the personal healthcare industry.

Many collaborations have also had commercial impact. For example, a collaboration between Bio21 researchers and Telix Pharmaceuticals, an Australian biopharmaceutical company, has led to a new Industrial Manufacturing Cooperative Research Centre. The Centre will translate new molecules to provide more effective and personalised cancer therapeutics, that were invented in the Bio21 Institute, to commercial manufacture.